

1           3. (AMENDED) The substrate processing system of claim [1] 11 further  
2 comprising a computer processor communicatively coupled to said impedance monitor so that  
3 said computer processor receives as an input the measured impedance level of said plasma.

1           4. (UNCHANGED) The substrate processing system of claim 3 further  
2 comprising a variable capacitor electrically coupled to said chamber and controllably coupled  
3 to said processor wherein said processor adjusts a capacitance level of said variable capacitor  
4 to vary the impedance of said plasma in response to an output of said impedance monitor.

1           5. (UNCHANGED) The substrate processing system of claim 3 further  
2 comprising a pressure control system configured to control a pressure level within said  
3 chamber and controllably coupled to said processor wherein said processor controls said  
4 pressure control system to vary the pressure within the chamber in response to the measured  
5 impedance level of said plasma.

1           6. (UNCHANGED) The substrate processing system of claim 3 wherein  
2 said processor controls said plasma power source to vary the power applied to the plasma in  
3 response to the measured impedance level of said plasma.

7. RESTRICTION REQUIREMENT.

8. RESTRICTION REQUIREMENT.

9. RESTRICTION REQUIREMENT.

10. RESTRICTION REQUIREMENT.

1           11. (UNCHANGED) A substrate processing system comprising:  
2           a deposition chamber comprising a reaction zone;  
3           a substrate holder that positions a substrate in the reaction zone;  
4           said substrate holder comprising a low frequency (LF) electrode;  
5           a gas distribution system that includes a gas inlet manifold for supplying one or  
6 more process gases to said reaction zone;  
7           said gas inlet manifold comprising a high frequency (HF) electrode;

8                   a plasma power source for forming a plasma within the reaction zone of said  
9 deposition chamber; and

10                  an impedance monitor electrically coupled to said high frequency electrode and  
11 said low frequency electrode.

1                 12. (UNCHANGED) The substrate processing system of claim 11 further  
2 comprising a variable capacitor electrically coupled to said LF electrode and controllably  
3 coupled to said processor wherein said processor adjusts a capacitance level of said variable  
4 capacitor to vary the impedance of said plasma in response to an output of said impedance  
5 monitor.

1                 13. (AMENDED) The substrate processing system of claim 11 further  
2 comprising [**a variable capacitor**] an impedance tuner coupled in series to said pedestal.

1                 14. (AMENDED) The substrate processing system of claim 13 wherein said  
2 [**variable capacitor**] impedance tuner is coupled between said pedestal and a low frequency  
3 RF generator.

1                 15. CANCEL

1                 16. (AMENDED) The substrate processing system of claim [14] 4 further  
2 comprising a matching network coupled to a high frequency RF generator and said gas  
3 manifold, wherein said matching network has capacitors that are different than said variable  
4 capacitor.

1                 17. (UNCHANGED) A substrate processing system comprising:  
2                   means for introducing one or more process gases into a reaction zone of a  
3 substrate processing chamber;

4                   means for forming a plasma from said one or more process gases;

5                   means for maintaining the reaction zone at deposition conditions suitable to  
6 deposit a layer from said one or more process gases;

7                   means for monitoring an impedance level of said plasma; and

8           means for adjusting deposition conditions in the reaction zone in response to  
9        said impedance level.

1           18. (AMENDED) A [means for depositing a film] substrate processing  
2        system as set forth in claim 17 wherein said means for adjusting deposition conditions  
3        comprises a variable capacitor electrically coupled to said processing chamber.--

Please add the following new claims:

1           --19. (NEW) The substrate processing system of claim 12, wherein said  
2        impedance tuner includes a variable capacitor.

1           20. (NEW) The substrate processing system of claim 19 further comprising  
2        a matching network coupled between said low frequency RF generator and said variable  
3        capacitor, wherein said matching network includes capacitors that are different than said  
4        variable capacitor.

1           21. (NEW) The substrate processing system of claim 11, further comprising  
2        a high frequency power supply coupled to said high frequency electrode and a low frequency  
3        power supply coupled to said low frequency electrode.--